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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/650,086	08/26/2003	James F. Bredt	ZCO-107CP2	5896

51414 7590 12/30/2005

GOODWIN PROCTER LLP  
PATENT ADMINISTRATOR  
EXCHANGE PLACE  
BOSTON, MA 02109-2881

EXAMINER
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SHOSHO, CALLIE E

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 12/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/650,086

Applicant(s)

BREDT ET AL.

Examiner

Callie E. Shosho

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 and 26-77 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 and 26-75 is/are rejected.
- 7) ☒ Claim(s) 76 and 77 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

1. All outstanding rejections except for those described below are overcome by applicants' amendment filed 10/3/05.

The new grounds of rejection set forth below are necessitated by applicants' amendment and thus, the following action is final.

**Claim Rejections - 35 USC § 112**

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-24 and 26-49 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

(a) Claim 1 has been amended to recite "a filler comprising plaster". It is the examiner's position that this phrase fails to satisfy the written description requirement under the cited statute since there does not appear to be a written description requirement of the cited phrase in the application as originally filed, *In re Wright*, 866 F.2d 422, 9 USPQ2d 1649 (Fed. Cir. 1989) and MPEP 2163. Applicant has not pointed to any portion of the specification, and examiner has not found any support for this phraseology in the specification as originally filed.

It is noted that page 7, line 30 of the present specification discloses that the filler includes glass beads, sand, rayon fiber, etc. while page 6, line 12 discloses the use of plaster. However, there is disclosure in the specification as originally filed that the filler comprises plaster.

(b) Claim 31 has been amended to recite the adhesive material “comprises” a polyvinyl pyrrolidone copolymer with vinyl acetate while claim 32 has been amended to recite filler “comprises” polyvinyl pyrrolidone copolymer with vinyl acetate. It is the examiner’s position that each phrase fails to satisfy the written description requirement under the cited statute since there does not appear to be a written description requirement of either cited phrase in the application as originally filed, *In re Wright*, 866 F.2d 422, 9 USPQ2d 1649 (Fed. Cir. 1989) and MPEP 2163. Applicant has not pointed to any portion of the specification, and examiner has not found any support for this phraseology in the specification as originally filed.

It is noted that the claims 31 and 32 as originally filed recited the adhesive material “is” a polyvinyl pyrrolidone copolymer with vinyl acetate or filler “is” a polyvinyl pyrrolidone copolymer with vinyl acetate, respectively. In the amendment filed 10/3/05, applicants changed “is” to “comprises” in each of claims 31 and 32. Such changes broadens the scope of each of the claims. However, there does not appear to be support for such changes in the specification as originally filed.

(c) Claim 38 has been amended to recite that the three dimensional printing process comprises “allowing the portion of the first particulate material layer to solidify” and “allowing the portion of the second particulate material layer to solidify”. It is the examiner’s position that each phrase fails to satisfy the written description requirement under the cited statute since there does not appear to be a written description requirement of either cited phrase in the application as

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originally filed, *In re Wright*, 866 F.2d 422, 9 USPQ2d 1649 (Fed. Cir. 1989) and MPEP 2163. Applicant has not pointed to any portion of the specification, and examiner has not found any support for this phraseology in the specification as originally filed.

(d) Claim 39 has been amended to recite “a soluble particulate adhesive material”. It is the examiner’s position that this phrase fails to satisfy the written description requirement under the cited statute since there does not appear to be a written description requirement of the cited phrase in the application as originally filed, *In re Wright*, 866 F.2d 422, 9 USPQ2d 1649 (Fed. Cir. 1989) and MPEP 2163. Applicant has not pointed to any portion of the specification, and examiner has not found any support for this phraseology in the specification as originally filed.

While there is support in page 11, line 28 of the present specification to recite “particulate adhesive material” and there is support in original claim 39 to recite “soluble adhesive material”, there appears to be no support in the specification as originally filed to recite “a soluble particulate adhesive material.

(e) Claim 49 has been amended to recite polymer fiber “comprises” a material selected from the group consisting of...” It is the examiner’s position that this phrase fails to satisfy the written description requirement under the cited statute since there does not appear to be a written description requirement of the cited phrase in the application as originally filed, *In re Wright*, 866 F.2d 422, 9 USPQ2d 1649 (Fed. Cir. 1989) and MPEP 2163. Applicant has not pointed to any portion of the specification, and examiner has not found any support for this phraseology in the specification as originally filed.

It is noted that the claim 49 as originally filed recited polymer fiber “is” a material selected from the group consisting of...”. In the amendment filed 10/3/05, applicants changed

“is” to “comprises”. Such changes broadens the scope of each of the claims. However, there does not appear to be support for such changes in the specification as originally filed.

4. Claims 1-24, 26-30, and 33-37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(a) Claim 1 has been amended to recite “a filler comprising plaster, up to about 80% by weight of the particulate material”. the scope of the claim is confusing because it is not clear what is present in an amount of “up to about 80%” the filler or the plaster. Clarification is requested.

(b) Claim 6, which depends on claim 5 which depends on claim 1, recites the limitation “the adhesive material” in line 1. There is insufficient antecedent basis for this limitation in the claim. it is suggested that the phrased is changed to “the particulate adhesive material”.

Similar suggestion is made for claim 7 which also recites “the adhesive material”.

**Claim Rejections - 35 USC § 102**

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1-4, 7, 23, 30, and 37-38 are rejected under 35 U.S.C. 102(e) as being anticipated by Greul et al. (U.S. 5,649,277).

The rejection is adequately set forth in paragraph 4 of the office action mailed 6/29/05 and is incorporated here by reference.

With respect to claim 38, it is additionally noted that Greul et al. disclose method of three dimensional printing comprising providing a three dimensional printing composition comprising 50% binder, delivering aqueous fluid to the first particulate layer, allowing the first layer to solidify, providing a second layer of particulate material, delivering aqueous fluid to the second particulate layer, and allowing the second layer to solidify which results in the formation of a solid article (col.4, line 66-col.5, line 38).

7. Claims 1-5, 7-16, 20, 23-25, 30, 33-37, 39-40, 44-49, 66-67, and 72-75 are rejected under 35 U.S.C. 102(e) as being anticipated by Anderson et al. (U.S. 5,738,921).

The rejection is adequately set forth in paragraph 6 of the office action mailed 6/29/05 and is incorporated here by reference.

8. Claims 1-4, 7, 9, 11-13, 23-25, 30, and 37 are rejected under 35 U.S.C. 102(e) as being anticipated by Leppard et al. (U.S. 5,965,776).

The rejection is adequately set forth in paragraph 7 of the office action mailed 6/29/05 and is incorporated here by reference.

9. Claims 1-5, 7, 23-24, 26, 29-30, 33-35, and 37 are rejected under 35 U.S.C. 102(e) as being anticipated by Suzuki et al. (U.S. 5,591,563).

The rejection is adequately set forth in paragraph 8 of the office action mailed 6/29/05 and is incorporated here by reference.

**Claim Rejections - 35 USC § 103**

10. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

11. Claims 68-71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson et al. (U.S. 5,738,921) in view of Mulvey et al. (U.S. 4,310,996).

The rejection is adequately set forth in paragraph 11 of the office action mailed 6/29/05 and is incorporated here by reference.

12. Claims 50-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson et al. (U.S. 5,738,921) in view of Mulvey et al. (U.S. 4,310,996).

The rejection is adequately set forth in paragraph 12 of the office action mailed 6/29/05 and is incorporated here by reference.

**Response to Arguments**

13. Applicants' arguments regarding Bredt (U.S. 5,660,621), Cima et al. '680 (U.S. 5,518,680), and Sachs et al. (U.S. 5,204,055) have been fully considered but they are moot in view of the discontinuation of the use of these references against the present claims.



14. Applicants' arguments filed 10/3/05 have been fully considered but, with the exception of arguments relating to Bredt, Cima et al. '680, and Sachs et al., they are not persuasive.

Specifically, applicants argue that Gruel et al. is not a relevant reference against the present claims given that there is no disclosure of particulate material comprising plaster and particulate adhesive material.

However, it is noted that the use of plaster is not required in present claim 1, i.e. "up to about 80%" which clearly includes 0% plaster. Given that Gruel et al. disclose the use of binder polymer, i.e. particulate adhesive, and copper powder, it is clear that Gruel et al. meets the requirements of the present claims.

Applicants also argue that Andersen et al. is not a relevant reference against the present claims given that Andersen et al. do not teach dry mixtures and thus, the composition of Andersen et al. is not suitable for use in three dimensional printing.

However, it is noted that while water is added to the composition of Andersen et al., the amount of water is as little as 5% (col.24, lines 36-38) and that a substantial amount of water is then removed by evaporation (col.30, lines 63-67). Further, it is disclosed in Andersen et al. that it is preferred that the minimum amount of water is used. Thus, it appears that the composition of Andersen et al. does contain little or no water, i.e. the composition is dry. Further, it is noted that there is nothing in the present claims that requires that the presently claimed composition contain no water. Additionally, while applicants argue that the composition of Andersen et al. is not

suitable for use in three dimensional printing, it is noted that applicants have provided no evidence to support this position.

In light of the above, it is the examiner's position that Andersen et al. remains a relevant reference against the present claims.

Applicants also argue that Leppard et al. is not a relevant reference against the present claims given that Leppard et al. disclose the use of aqueous dispersions and other fluids in contrast to present claim 1 which requires particulate material. However, it is not clear where Leppard et al. disclose the use of such aqueous dispersions and other fluids. Clarification is requested.

Applicants also argue that Suzuki et al. is not a relevant reference against the present claims given that Suzuki et al. does not disclose particulate material comprising plaster and particulate adhesive.

However, it is noted that Suzuki et al. do disclose the use of binder, i.e. particulate adhesive. While there is no disclosure of plaster, it is noted that the use of plaster is not required in present claim 1 against which Suzuki et al. is applied, i.e. "up to about 80%" which clearly includes 0% plaster.

**Allowable Subject Matter**

15. Claims 76-77 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**Conclusion**

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

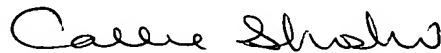
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Callie E. Shosho  
Primary Examiner  
Art Unit 1714

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12/27/05